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APPENDIX B

SUPPLEMENTARY MEASURES OF TIMING: STANDARD AND POOR'S DATA

I. Relative Timing of New Orders and Shipments

Standard and Poor's Corporation (S&P) has compiled estimates of relative changes in the value of manufacturers' shipments, new and unfilled orders, and inventories. These monthly indexes begin in 1949, and their analysis in this book extends through 1958. For this period, they were published in relatives, 1949 = 100, unadjusted for seasonal variation; the seasonal corrections, where needed, have been made by the National Bureau.[1]

The S&P sample reporting the sales (value of shipments), orders, and inventory figures comprises several hundred companies, including the largest ones in each of the major industries covered.[2] The companies are grouped into industries, so there is no overlap in coverage between the industry indexes. Some industries such as auto parts and chemicals were said to be quite well represented; others, such as textiles, considerably worse. In general, the coverage in these indexes is substantially narrower than that in the Commerce (OBE) data for the same period.

[1] The data for 1949–56 appear in Standard & Poor's, *Industry Surveys, Trends and Projections*, Section 6, November 15, 1956, under the heading "Progress Report of Industry." Later issues of this release continued the series in the same basic form. The December 15, 1960, issue of S&P *Trends and Projections* (section 5) presents revised "Progress Report of Industry" data in relatives, 1957 sales = 100, for the period January 1949 through October 1960. The December 6, 1962, issue carries the data forward through October 1962.

[2] The orders are reported on an "as received" basis, like the Commerce data; the inventories include stocks in all stages of fabrication. New and unfilled orders and shipments are reported independently. This information, and that in the text concerning the coverage, comes from conversations with S&P personnel engaged in the preparation of the data. Published information about these S&P indexes is very limited.

Being shorter than the Commerce series, the S&P indexes offer fewer timing observations per industry and, being based on smaller samples, they are also more erratic. Considerable uncertainty attaches therefore to some of the dates of their specific-cycle turns. However, in the few cases where the S&P and the OBE data can be roughly matched in terms of industrial coverage, there is a good deal of correspondence between their relative movements, probably because the indexes are based on reports from most of the largest firms in the industries covered. Several of these industries are sufficiently concentrated that the series may be fairly representative, despite the relatively small number of companies participating in the S&P surveys. The evidence for the most comprehensive series that can be compared is presented in Chart 2-1 and the related text; there, one substantial difference in the broad movements of these series was found and explained by the behavior of cancellations. The following timing comparisons provide additional documentation of the good correspondence between the results of the two independent compilations. The tendency for the matched turning points to coincide is certainly pronounced.[3]

Lead (−) or Lag (+) in Months of Standard and Poor's Indexes at Turns in OBE Series

	At 1949 Troughs	*At 1951 "Korean" Peaks*	*At 1954 Troughs*	*At 1956 Peaks*	*At 1958 Troughs*
New Orders	0	0	+2	−6	+1
Shipments	0	0	0	0	−1

Chart B-1 presents the paired S&P indexes of new orders and shipments for all but a few of the component industries and for all companies included.[4] The series are of unequal quality, since the value of such small-sample estimates is lower, the smaller the average size and the more widely varying the experience of the firms in the given in-

[3] The only example of a larger deviation from synchronous timing seems to be at the 1956 peaks in new orders, but even this is not a real exception. The 1956 turning dates for new orders are based on marginal considerations, and comparing them may be misleading. A glance at Chart 2-1 shows that the first decline in the two series started at the same time, at the beginning of 1956.

[4] The latter series, labeled the "composite" indexes, are weighted averages of the component-industry indexes, but they also include a few companies in industries for which no separate indexes are published because of insufficient coverage.

Chart B-1
Standard and Poor's Indexes of Value of Manufacturers' New Orders and Shipments, Thirteen Major Industries, 1949–58

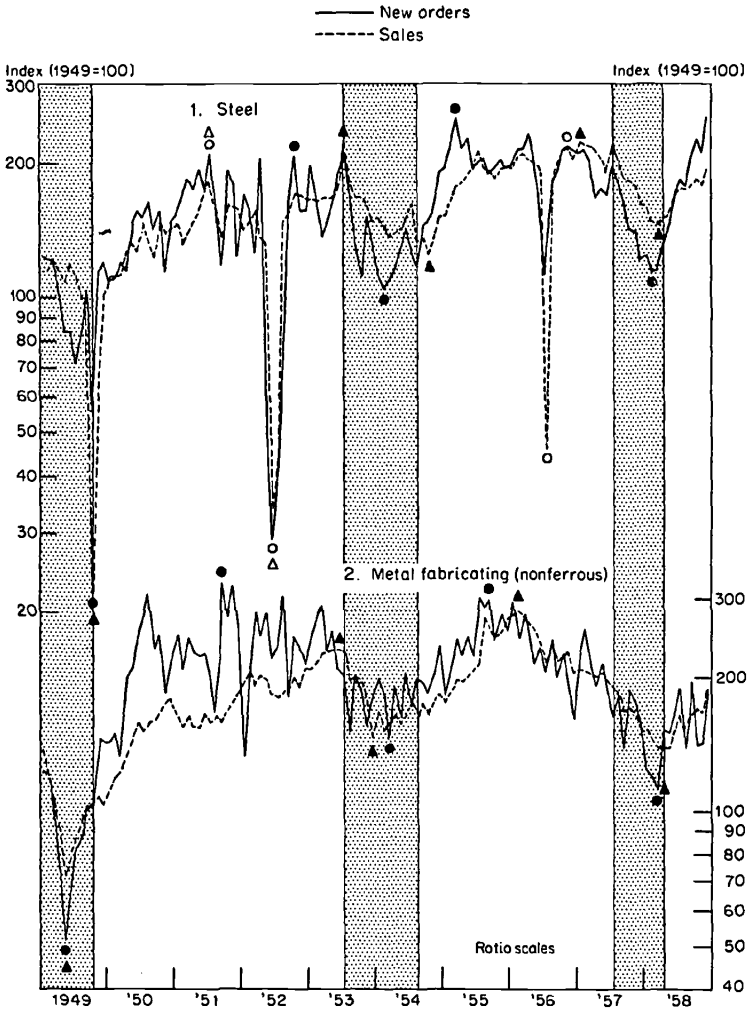


Chart B-1 (continued)

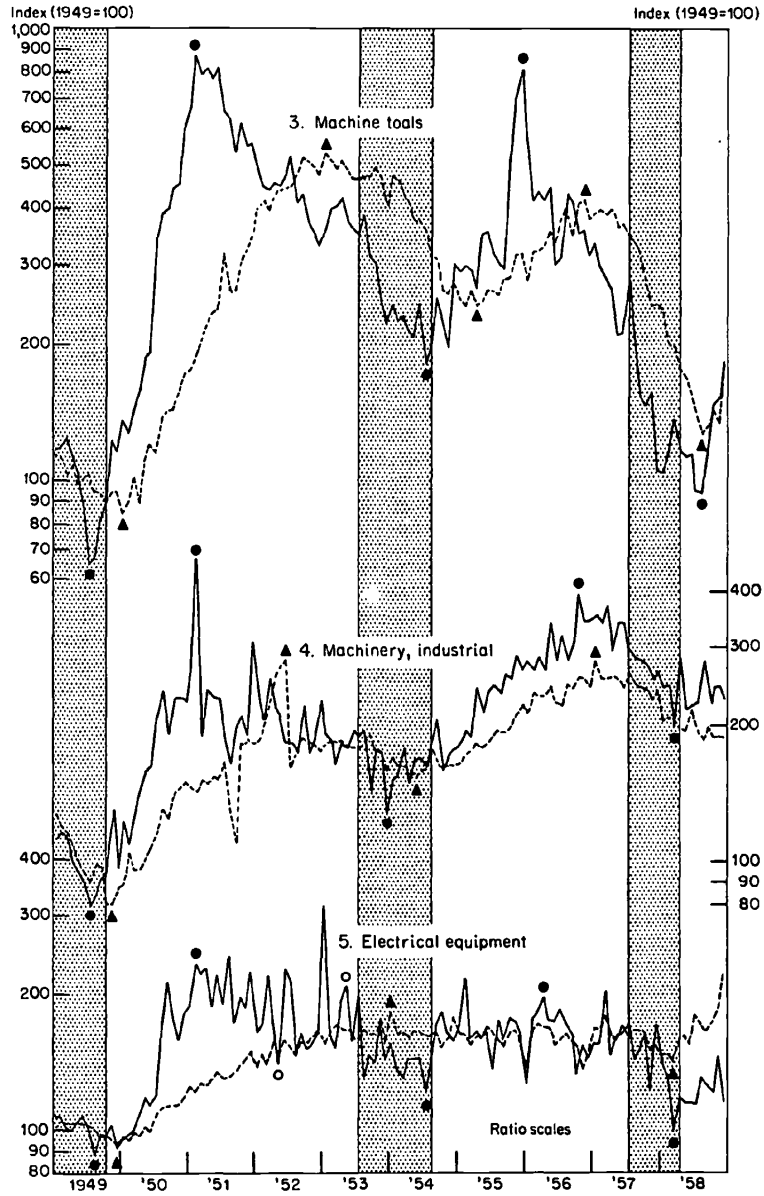


Chart B-1 (continued)

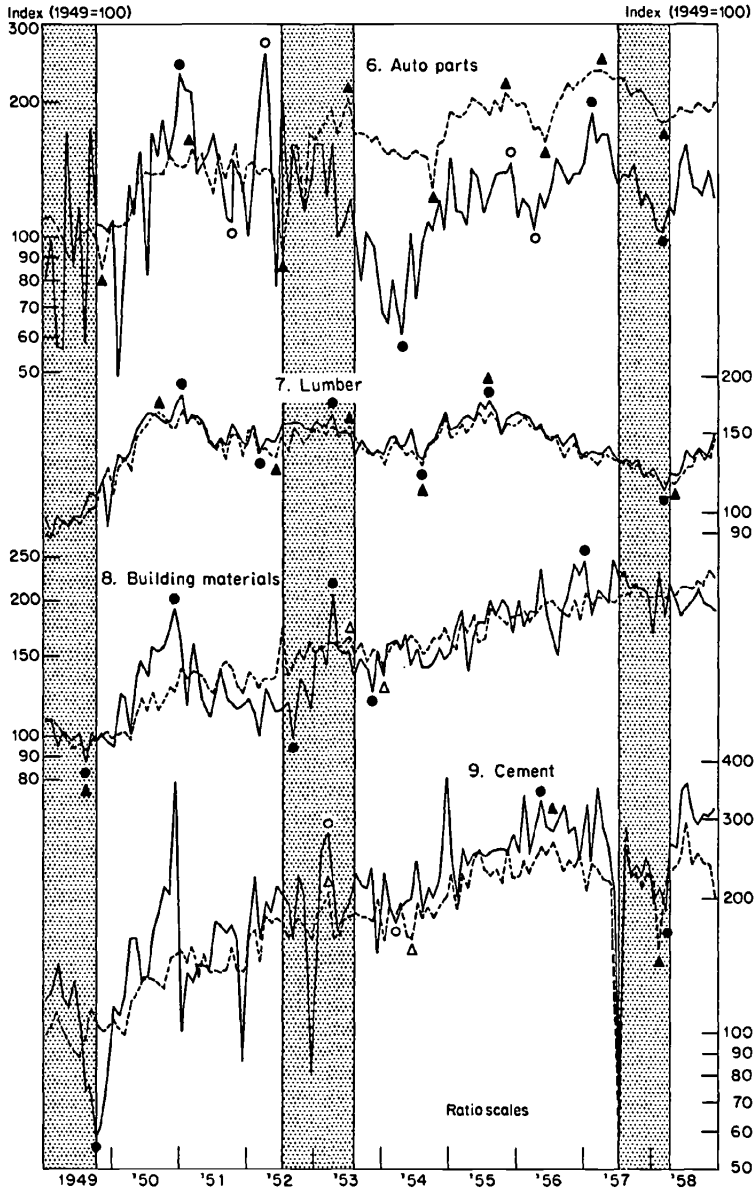


Chart B-1 (continued)

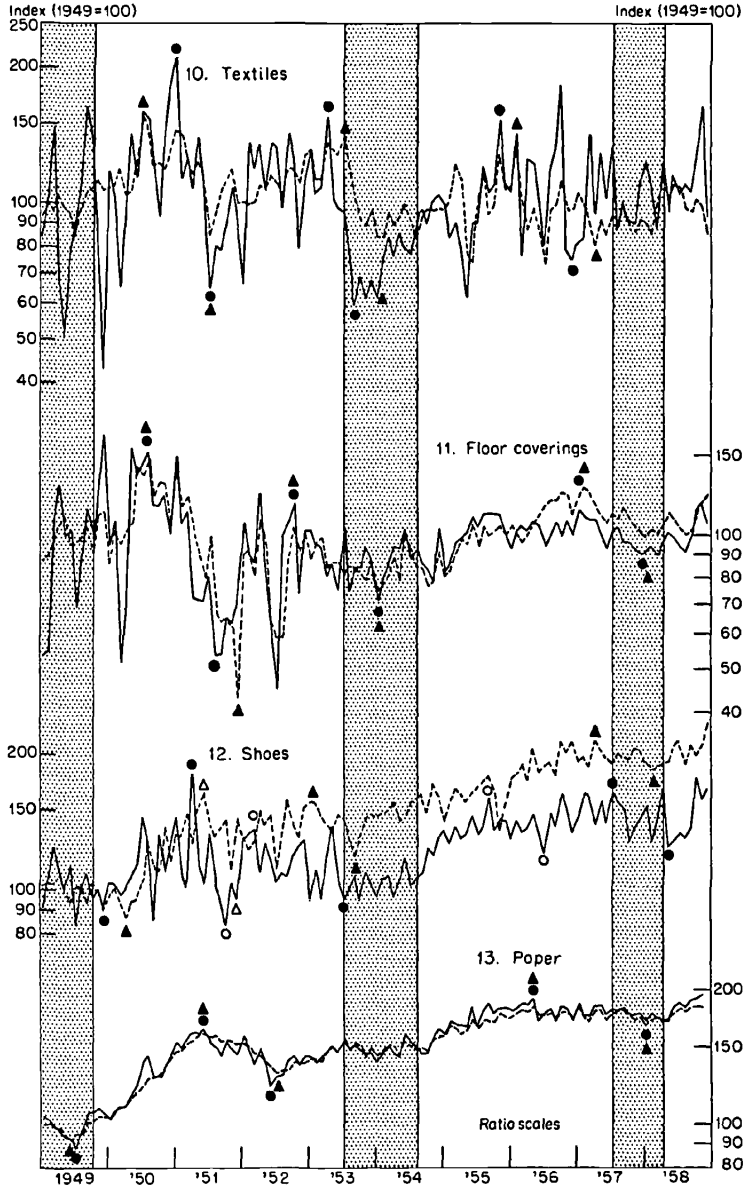
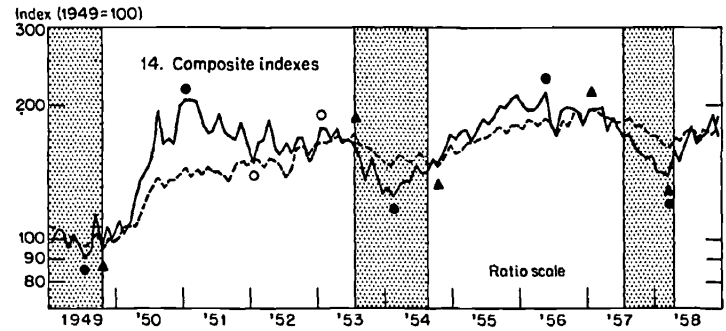


Chart B-1 (concluded)



Note: Shaded areas represent business cycle contractions; unshaded areas, expansions. Dots identify peaks and troughs of specific cycles in new orders; black triangles, sales (value of shipments). Circles and white triangles identify short cycles or retardations in new orders and sales, respectively.

Source: Standard and Poor's Corporation. Seasonal adjustments by the National Bureau of Economic Research.

dustry. Thus industries such as textiles or shoes must have a considerably weaker representation in a survey of this sort than, say, steel or industrial machinery. But we are not concerned here with "universe" estimates for either new orders or shipments of any industry. Our interest is solely in the relations among the different activities covered, and in this respect the S&P indexes deserve some attention. Hence, we examine all the available evidence. However, to avoid a virtual duplication of the graphs, Chart B-1 does exclude the indexes for the paper industry, which resemble closely the corresponding OBE series in Chart 4-3. Also excluded from the graphical presentation are the indexes for the aircraft industry, which offer few advantages over the comprehensive Census estimates of new orders and shipments of aircraft manufacturers. The latter series, which are quarterly, were presented in Chart 4-4. The cyclical course of the corresponding S&P indexes is similar but obscured by exceedingly large and erratic month-to-month oscillations for new orders.

There is one disturbing factor as far as our comparisons are concerned, however, and while its influence cannot be evaluated with the information available it is potentially serious. Some of the companies reporting shipments (sales) in the S&P sample do not report new orders. In each industry the coverage for either activity is consistent

over time, but in several cases the sales series represents a larger number of companies than does the corresponding new-order series.

Our graphs reveal some of the apparent results of these discrepancies in coverage. Over a period of years, total new orders and total shipments of a given firm or group of firms will tend to have equal average values: sooner or later, whether immediately from stock or months hence from future output, any orders (except for a few that are canceled) will be filled. If in certain industries new orders rise high above shipments when demand expands, they also fall well below shipments in slack times. The tendency toward an equalization of the averages for the two activities is largely a cyclical phenomenon. But Chart B-1 shows considerable departures from this pattern for some of the industries in the S&P sample. In particular, new orders remained below shipments throughout 1953–58 for auto parts and shoes (graphs 6 and 12). These instances of incongruent behavior cannot be ascribed to the form in which these series are presented.[5] They occur in industries in which the companies reporting new orders are substantially fewer than those reporting shipments, and are presumably due to these discrepancies in coverage between the two variables.[6]

Table B-1 lists the timing comparisons that can be made between the specific turns in new orders and shipments for fourteen pairs of Standard and Poor's series. The observations refer to a short period marked by three revivals and two recessions, all of them mild, and by the Korean War, which was accompanied by buying waves of many products. The peaks and troughs in the S&P indexes, like those in the Commerce series, are concentrated in zones that are apparently associated with these business reversals or transitions. But the indexes, somewhat more often than the Commerce series, failed to turn

[5] The Standard and Poor's series are published as indexes based on the average monthly values of new orders and sales in 1949. Because of the recession, the average levels of new orders in 1949 were lower than those of sales for several industries. We were able to make some rough allowances for this fact by expressing both the new orders (N) and the sales (S) of an industry as percentages of its average monthly *sales* in 1949. (This arrangement makes the relative position of the paired index series similar to what would be obtained by plotting to a common scale the corresponding value aggregates, as was done in the charts for the OBE series presented earlier in this volume.) After the adjustments, the series still show some persistent deviations from the expected tendency for the across-the-cycle averages of N and S to be approximately equal.

[6] The discrepancy in coverage would have no significant effect on the relation concerned if no significant difference existed in the behavior of new orders between those companies in the sales sample that do and those that do not report new orders. Indeed, the building materials industry conforms well to the expected pattern, even though the coverage discrepancy is here particularly large, with the average value of new orders in 1949 being somewhat less than half the average value of sales.

in one or other of these zones, in particular during the Korean period (see the note to Table B-1 and the text above on the differential behavior of gross and net new orders in that period).

Table B-1 shows that at the shipments troughs connected with the 1954 revival new orders led in most industries by substantial intervals, whereas their leads in the 1949 upturn zone were fewer and on the whole shorter. At the 1958 recovery, the timing of orders and shipments was roughly coincident. This is similar to what was found for the OBE series in Table 4-5. For the corresponding columns of peak observations, broad comparisons of the same type reveal more differences.

The accompanying tabulation shows the breakdown of the timing comparisons based on the Standard and Poor's and the OBE data for 1949–58. The similarity of the two distributions is considerable.

	Standard and Poor's, Thirteen Industries		*Office of Business Economics, Eleven Industries*	
	No.	*Per Cent*	*No.*	*Per Cent*
Long leads (over 3 months)	18	36.7	18	39.1
Short leads (1 to 3 months)	16	32.7	15	32.6
Exact coincidences	11	22.4	8	17.4
Short lags (1 to 3 months)	4	8.2	4	8.7
Long lags (over 3 months)	0	–	1	2.2
Total	49	100.0	46	100.0

II. Timing of Orders at Business Revivals and Recessions

Table B-2 presents the record of cyclical timing of the S&P indexes of new orders. Some broad similarities exist between this record and that shown in Table 11-2 for the OBE-Census series on new orders for the major manufacturing industries. The average leads for seven component series in that table at the revivals of 1949, 1954, and 1958 are −4.0, −8.1, and −2.6 months, and at the recessions of 1953 and 1957, −5.1 and 9.9 months, respectively.[7] According to these data, therefore,

[7] The industry groups included are primary metals, fabricated metal products, electrical machinery, nonelectrical machinery, transportation equipment, other durable goods, and nondurable goods industries reporting unfilled orders.

Table B-1
Timing of Standard and Poor's Indexes of Value of Manufacturers' New Orders at Turns in Corresponding Indexes of Shipments, 1949–58

Industry	Lead (–) or Lag (+) in Months of New Orders at Turns in Shipments in Turning Zone Associated with: 1949 Revival: Trough (1)	1953 Recession: Peak (2)	1954 Revival: Trough (3)	1957 Recession: Peak (4)	1958 Revival: Trough (5)
Durable goods industries					
Steel	0	−9	−8	−2 [a]	−1
Metal fabricating (nonferrous)	0	−3 [a]	−3	−5	−1
Machine tools	−6	−23	−9	−11	0
Machinery, industrial	−4	−6 [a]	−5	−3	n.i.
Electrical equipment	−4	−8 [a]	n.s.	n.s.	0
Auto parts	n.i.	−15	−6	−2	0
Lumber	n.i.	−3	0	0	−2
Building materials	0	−3 [b]	−2 [b]	n.s.	n.s.
Cement	n.s.	0	−3	−2	+1
Nondurable goods industries					
Textiles	n.i.	−3	−5	−3	−4
Floor coverings	n.i.	0	0	−1	−1
Shoes	−4	−11	−2	+3	+3 [a]
Paper	+1	n.t.	n.t.	0	0
Composite index [c]	−3	−6	−8	−8	0
Component industries, average	−2.1	−7.0	−3.9	−2.4	−0.5
(No. of observations)	(8)	(12)	(11)	(11)	(11)

n.i. = not identified (timing of new orders and/or sales uncertain).
n.s. = no turn in sales at this recession or revival.
n.t. = no specific-cycle turn in either new orders or sales.

Note: A few of the Standard and Poor's series show additional cyclical movements during the Korean period, 1950–52, and some of the turning points in these movements can be matched. Note, however, that the trough dates for steel fall in June 1952, a month of widespread work stoppages in the industry (like the previous troughs of October 1949; see Chart B-1), but they seem to approximate well the turning dates between falls and rises in new orders and sales. The resulting observations, excluded from the table because of the marginal nature of some of the movements and the uncertain dating of some of the turns involved, are listed below with the proper reservations (notes a and b are the same as for the table proper).

	Peaks (1950–51)	Troughs (1951–52)		Peaks (1950–51)	Troughs (1951–52)
Steel	0	0	Floor coverings	0	−4
Auto parts	−2	−9 [a]	Shoes	−2 [b]	−1 [a,b]
Lumber	+4	−3	Paper	0	−1
Textiles	+6	0			

Notes to Table B-1 (concluded)

[a] The turning point of new orders used in this comparison is a minor or "subcycle" turn rather than a specific-cycle turn (see Chart B-1).

[b] The turning point of shipments used in this comparison is a minor or "subcycle" turn rather than a specific-cycle turn (see Chart B-1).

[c] Includes companies in industries other than those shown above. For some industries, no separate indexes are presented in the Standard and Poor's *Industry Surveys* because the coverage, or the number of firms reporting, is considered too small. For one industry—aircraft—indexes of both new orders and shipments are available, but timing of the highly erratic new-order series could not be satisfactorily ascertained (see text).

the shortest leads occurred at the 1958 revival and the longest at the 1957 recession, while the 1949, 1953, and 1954 episodes have intermediate ranks in the succession from shorter to longer leads. The component-industries averages listed in Table B-2 yield the same ranking of the five business cycle turns. Moreover, the average leads of new orders computed from Table E-2 for fourteen selected industrial subdivisions also give the same ranks to the five turning-point zones of the 1949–58 period.[8] This type of agreement between different sets of data seems encouraging; it is probably significant. There is, of course, no reason to expect that such data would reveal close similarities of detail. (As noted elsewhere, individual timing observations can be very sensitive even to small discrepancies between series at the critical turning points.)

There is one conspicuous difference between the timing records here compared, namely, that most of the Commerce series show cyclical downturns in 1952 and 1953 which anticipate the business peak of July 1953, while most of the S&P indexes do not (see Table B-2, column 2, and Tables 11-2 and E-2, columns 3). What this means is that in the Commerce series those contractions that followed the Korean buying surge are clearly separated from the contractions associated with the 1953 business recession by upward movements which, though mostly mild, are long and distinct enough to be recognized as specific expansions. In several S&P indexes, on the other hand, the corresponding movements are weaker or shorter or both, and are best viewed as merely retardations superimposed upon the contrac-

[8] These industries are iron and steel; primary nonferrous metals; electrical generator apparatus; other electrical equipment; metalworking machinery; general industrial machinery; special-industry machinery; aircraft; motor vehicle parts and accessories; lumber; stone, clay, and glass products; textiles; leather; and paper. The average leads of new orders according to these data are, in months: in 1949, −3.9; in 1953, −4.3; in 1954, −7.2; in 1957, −10.6; and in 1958, −2.1.

Table B-2
Timing of Standard and Poor's Indexes of Value of Manufacturers' New Orders at Each Business Cycle Turn, 1949–58

Industry	Lead (−) or Lag (+) in Months of New Orders at Business Cycle Turns				
	Trough Oct. 1949 (1)	Peak July 1953 (2)	Trough Aug. 1954 (3)	Peak July 1957 (4)	Trough April 1958 (5)
Durable goods industries					
Steel	0	−9	−6	−28[a]	−2
Metal fabricating (nonferrous)	−5	n.m.[b]	−5	−22	−1
Machine tools	−3	n.m.	−1	−19	+4
Machinery, industrial	−3	n.m.	−8	−9	−1
Electrical equipment	−2	n.m.[c]	−1	−15	−1
Aircraft	−3[d]	n.m.	−11	−11	−6
Auto parts	n.i.	n.m.[e]	−4	−5	−1
Lumber	n.i.	−3	0	−23	−1
Building materials	−2	−3	−9	−6	−3
Cement	0	n.m.[f]	n.m.[f]	−14	−1
Nondurable goods industries					
Textiles	n.i.	−3	−11	n.m.	n.m.
Floor coverings	n.i.	−9	−7	−6	−4
Shoes	+2[d]	n.m.	−13	0	+1
Paper	−3	n.m.	n.m.	−14	−3
Composite index[g]	−3	n.m.[h]	−6	−14	−1
Component industries, average	−1.9	−5.4	−6.3	−13.2	−1.5
(No. of observations)	(10)	(5)	(12)	(13)	(13)

n.i. = not identified (timing uncertain).

n.m. = not matched.

[a] A secondary peak led the July 1957 business downturn by 8 months.

[b] A minor peak, leading the July 1953 business downturn by 4 months, can be distinguished.

[c] A minor peak, leading the July 1953 business downturn by 2 months, can be distinguished.

[d] Based on a tentative trough date.

[e] A minor peak, leading the July 1953 business downturn by 15 months, can be distinguished.

[f] A minor contraction in this series began 4 months, and ended 5 months, earlier than the business contraction of July 1953–August 1954.

[g] S&P total index of the value of manufacturers' new orders. Covers companies classified into the fourteen industries listed on the lines above plus a few companies in industries for which no separate indexes were published because of inadequate coverage.

[h] A minor peak, leading the July 1953 business downturn by 6 months, can be distinguished.

Table B-3
Timing of Standard and Poor's Indexes of Value of Manufacturers' Unfilled Orders at Each Business Cycle Turn, 1949–58

Industry	Lead (−) or Lag (+), in Months, of Unfilled Orders at Business Cycle Turns				
	Trough Oct. 1949 (1)	Peak July 1953 (2)	Trough Aug. 1954 (3)	Peak July 1957 (4)	Trough April 1958 (5)
Durable goods industries					
Steel [a]	−1	−18	0	−9	+2
Metal fabricating (nonferrous)	0	−19	−1	−5	+7
Machine tools	0	−19	+4	−15	+8
Machinery, industrial	0	−15	+5	−4	+8
Electrical equipment	+8	−6	+11	0	−3
Aircraft	n.i.[b]	+3	+1	−6	−5
Auto parts [a]	+9	−12	−1	−2	+1
Lumber [a]	−4	−8 [c]	−7	−22	−1
Building materials	+1	−3 [c]	+3	−1	+1
Cement [a]	n.i.[d]	n.m.[e]	−4	0	+1
Nondurable goods industries					
Textiles [a]	−5	−3 [c]	−5	0	−4
Shoes [a]	+6	−7 [c]	−4	n.t.	n.t.
Paper	−4	+2 [c]	−3	−15	+1
Composite index [f]	−2	−12	+2	−4	0
Component industries, average	+0.9	−8.8	−0.1	−6.6	+1.3
(No. of observations)	(11)	(12)	(13)	(12)	(12)

n.i. = not identified (timing uncertain).

n.m. = not matched.

n.t. = no turn.

[a] Seasonally adjusted for NBER by Census Method II. The seasonal variations were found to be large in one of these series (shoes) and mild or moderate in the other five. The remaining series required no seasonal adjustments.

[b] This series rose steeply in 1949 and through the rest of the 1948–53 expansion. Its lowest values in 1949 were in January and February.

[c] Timing is measured from the second of the two peaks that each of these series reached during the period 1950–53. (The series peaked first during the early phase of the Korean War in 1950–51, then contracted, and expanded again in 1951–53. Each of the remaining series in this table shows only one major peak during the same period.)

[d] This series rose steeply through 1949 and 1950, except for a short decline (not a cyclical contraction) in August–October 1949.

[e] This series reached a high peak in January 1951, then declined through April 1954. No major countermovement interrupted that contraction, and the series shows no cyclical downturn that can be matched with the 1953 business peak.

[f] S&P total index of the value of manufacturers' unfilled orders. Covers companies classified into the industries listed on the lines above plus a few companies in industries for which no separate indexes were published because of inadequate coverage.

tions that began early in 1951, not as cyclical expansions. This point has already been documented, in Chapter 2, for the estimates of total advance orders. As suggested there, it is probably a consequence of the temporary increase in cancellations, especially of military orders.

Table B-3 shows the timing of S&P indexes of unfilled orders at the five business cycle turns of 1949–58. This record, too, is in a broad agreement with that of the OBE-Census series as presented in Table 11-13. According to both tables, the longest leads of the backlogs (of about 9–12 months in the over-all aggregates and on the average) occurred at the business peak of 1953. The leads at the 1957 peak tended to be shorter (4–7 months when judged by the corresponding summary measures). Short leads or coincidences prevailed at the 1949 trough, short lags or coincidences again at the troughs of 1954 and 1958.